

24



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,122	03/29/2001	Kavitha Vallari Devara	US 010134	5639

24737 7590 07/28/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

AKLILU, KIRUBEL

ART UNIT	PAPER NUMBER
----------	--------------

2617

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,122

Applicant(s)

DEVARA, KAVITHA VALLARI

Examiner

Kirubel Aklilu

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 4/11/05 have been fully considered but they are not persuasive.

With respect to the Tranchard reference, the Applicants argue that the features “prioritizing and scheduling insertion of content to be inserted within said transport stream based upon said estimate of future available bandwidth and characteristics of said insertion content”, as recited in Claims 1, 5, 9 and 13 is not anticipated by Tranchard.” The Applicant further argues with respect to col. 8 lines 29-42 of Tranchard et al “is only based on the bit rate available and makes no mention of using characteristics of the insertion content, as required by the claims.” The Examiner respectfully disagrees. Tranchard et al. do indeed teach “prioritizing and scheduling insertion of content to be inserted within said transport stream based upon said estimate of future available bandwidth **and characteristics of said insertion content**”. PIDs in an MPEG data stream are interpreted to be characteristics of an insertion content that may characterize a video data apart from an audio data (see col. 5 line 57- col. 6 line 5 “In the data stream, packets of data are identified by their packet ID or PID, video data having one PID value, audio data another etc. In the MPEG standard, null packets of data have the predetermined PID value of 0x1FFF. By way of contrast, the PID value

assigned to a given type of data (audio, video etc) may be determined by the content provider"). And Tranchard et al. also teach the PID filter and PID counter use the PID value of a packet (which is interpreted to be a characteristic of the content as described above), to detect, delete or modify a packet based on the packet's PID. See col. 8 lines 39-53 "Alternatively, the counter 21 may be used to detect the presence of a packet such as a private data packet or the like which is to be modified or deleted by the unit . . . a PID filter and demux unit 22 is used to filter out packet sequences of a given PID value and to copy these packets to the memory 27 . . . the filter 22 may be programmed to recognize table ID values, table ID extension values, section data etc". See also col. 9 lines 14-26 "the fact that a given packet has been filtered and copied into the memory does not mean that the packet has been physically removed from the transport stream. Accordingly, in the event that packets of a given PID value are to be inserted in the transport stream, it will be necessary to delete the present packets having this value to avoid collision. . . the packet deletion unit is adapted to transform packets of a given PID value to null packets". Clearly, the above passages show that PID value of a packet is used to filter out and in certain situation delete a packet, resulting in the transformation of a packet with a payload into a null packet. Clearly, the transformation of a packet with a payload into a null packet does affect that particular packets schedule and priority in the insertion process. A packet with a pay load has a different schedule and priority from a null packet (see col. 10 lines 32-35 "a scheduler reading each of the queues at regular intervals to introduce the packet data in a cyclic fashion into the stream, a **packet being introduced at each occurrence of a null packet.**") . Therefore,

Art Unit: 2617

Tranchard does indeed teach that the prioritization and scheduling of content to be inserted is also based on the characteristic of said insertion content (the PID value of a packet), as the PID value of a packet can transform a packet with a payload into a null packet, which clearly will affect its priority and scheduling of the packet.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **1,3-5,7-9,11-13,15-17**, and **19-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Tranchard et al (EP 0926894).

1. As for **Claim 1**, Tranchard teaches for use in a transceiver, an adaptive data insertion mechanism for inserting data within a transport stream without destructive disturbance comprising (see Tranchard et al. col. 4 lines 54-57 “the scrambling unit may also comprise a packet insertion means for inserting transport packet data in the transport stream.” The system is interpreted to be **adaptive** because col. 4 lines 1-5 teach “the scrambling system further comprises one or more access control systems connected to the central control means and **adapted** to receive a control word . . .”):

a bandwidth estimator producing an estimate of future available

Art Unit: 2617

bandwidth within said transport stream (see col. 3 lines 33-40 "preferably, the scrambling unit also comprises a packet counting means for counting the number of packets of a predetermined packet ID value in the received transport data stream. For example, the packet counting means may be used to count the number of null packets in the data stream to enable evaluation of the space available in the transport stream to insert ECM packets etc.");

a scheduler prioritizing and scheduling insertion of content to be inserted within said transport stream (see col. 10 lines 29-56 "a scheduler reading each of the queues at regular intervals to introduce the packet data in a cyclic fashion into the stream, a packet being introduced at each occurrence of a null packet. The scheduler handles the continuity counter (i.e. the sequential number of the packet) within the packet sequence to ensure the correct numbering of the transmitted sequence". It is interpreted that as the scheduler handles the continuity counter so as to ensure the correct numbering of the transmitted sequence, the scheduler is prioritizing the order of the packets according to their continuity counter) based upon said estimate of future available bandwidth (see col. 8 lines 29-42 "the PID counter 21 may be used to count the number of null packets present in the transport stream so as to evaluate the bit rate available for insertion of further-packets". As described above, the scheduler introduces a packet (to be inserted into the packet stream), at each occurrence of a null packet. Clearly, the number of available null packets (as determined by the PID counter) determines the available future bandwidth. Characteristics of said insertion content is also used in prioritization and scheduling insertion of the content. The PID values of

Art Unit: 2617

packets are interpreted to be characteristics of the packet (see col. 5 line 57- col. 6 line 5 "In the data stream, packets of data are identified by their packet ID or PID, video data having one PID value, audio data another etc. In the MPEG standard, null packets of data have the predetermined PID value of 0x1FFF. By way of contrast, the PID value assigned to a given type of data (audio, video etc) may be determined by the content provider") See col. 8 lines 39-53 "Alternatively, the counter 21 may be used to detect the presence of a packet such as a private data packet or the like which is to be modified or deleted by the unit . . . a PID filter and demux unit 22 is used to filter out packet sequences of a given PID value and to copy these packets to the memory 27 . . . the filter 22 may be programmed to recognize table ID values, table ID extension values, section data etc". See also col. 9 lines 14-26 "the fact that a given packet has been filtered and copied into the memory does not mean that the packet has been physically removed from the transport stream. Accordingly, in the event that packets of a given PID value are to be inserted in the transport stream, it will be necessary to delete the present packets having this value to avoid collision. . . the packet deletion unit is adapted to transform packets of a given PID value to null packets". Clearly, the above passages show that PID value of a packet is used to filter out and in certain situation delete a packet, resulting in the transformation of a packet with a payload into a null packet. Clearly, the transformation of a packet with a payload into a null packet does affect that particular packets schedule and priority in the insertion process. A packet with a payload has a different schedule and priority from a null packet (see col. 10 lines 32-35 "a scheduler reading each of the queues at regular intervals to introduce the packet data in

Art Unit: 2617

a cyclic fashion into the stream, **a packet being introduced at each occurrence of a null packet.**"). Therefore, Tranchard does indeed teach that the prioritization and scheduling of content to be inserted is also based on the characteristic of said insertion content (the PID value of a packet), as the PID value of a packet can transform a packet with a payload into a null packet, which clearly will affect its priority and scheduling of the packet.

an insertion unit inserting scheduled insertion content within said transport stream by replacement of selected replaceable content within said transport stream to form a new transport stream (see col. 3 lines 5-11 "the packet insertion means may act to insert a packet of data in the transport stream by detecting the presence of a null packet and replacing this packet by the packet to be inserted").

2. As for **Claim 5**, the limitation for Claim 5 can be found in Claim 1. Claim 5 is analyzed and rejected as previously discussed with respect to Claim 1. Claim 5 further requires:

A transceiver comprising: a input connection receiving an incoming transport stream (see fog. 2 unit 10 and 11 Input 1 and 2; col. 5 lines 26-30 "the scrambling unit 1 receives at its input unscrambled transport packets from a multiplexer 4 . . .");

an output connection from which a new transport stream is transmitted (see fig. 2 unit 30 CLR1 output 31 CLR2 output; col. 11 line 57- col. 12 line 1 "the outputs 30,31 represent the transport stream after the modification by insertion/deletion of packets etc"), said new transport stream including at least portions of said incoming transport

Art Unit: 2617

stream (see col. 10 lines 6-8 "Only the PID field in the transport packet header is modified. Transport packets not designated by these PID values remain unchanged" Since some packets remain unchanged, it is interpreted that the output stream contains portions of said incoming transport stream unchanged);

3. As for **Claim 9**, the limitations of Claim 9 can be found in Claim 1. Claim 9 is analyzed and rejected as previously discussed with respect to Claim 1.

4. As for **Claim 13**, the limitations of Claim 20 can be found in the limitation of Claim 1. Claim 13 is analyzed and rejected as previously discussed with respect to Claim 1. Claim 13 further requires: A computer program product within a computer usable medium for adaptive data insertion within a transport stream without destructive disturbance comprising: providing instructions to perform said limitations as presented in Claim 1. Tranchard teaches a Central Control Station that is connected to a computer that provides instructions to perform said limitations (see fig. 1 unit 3 computer, unit 2 Central Control Station. See col. 11 lines 21-35 "The scrambler carrier out scrambling of the data according to the control word provided by the central control station 1. . . the control word data is signed at the central control station by a private key and the control word and signature sent to the unit 1." Also see col. 2 lines 54-57 "the scrambling unit may also comprise a packet insertion means for inserting transport packet data in the transport stream." Therefore, it is interpreted that the steps that the

scrambler takes in inserting transport packet data in the transport stream are instructions that are received from the scrambler by the Central Control station.)

5. As for **Claim 3,7,11,and 15** Tranchard teaches said insertion unit replaces selected packets within said transport stream which include one of one or more selected packet type identifiers with packets for said insertion content while passing packets which include packet type identifiers other than said selected packet type identifiers to form said new transport stream (see col. 3 lines 5-11 "the packet insertion means may act to insert a packet of data in the transport stream by detecting the presence of a null packet and replacing this packet by the packet to be inserted. A null packet is a packet generated during the operating cycle of the multiplexer than contains no data. It is conventionally identified by a characteristic PID value." Since only packets that are identified as null packets are replaced by a packet to be inserted, it is interpreted that packets that are not identified as null packets are passed. Also see col. 10 lines 5-7 "Transport packets not designated by these PID values remain unchanged").

6. As for **Claim 4,8,12, and 16** Tranchard teaches said insertion unit replaces null packets within an MPEG-2 transport stream (see col. 9 lines 37-39 "the packet insertion unit 25 is in fact adapted to detect and replace any null packets by packets held in this

Art Unit: 2617

memory for insertion in the transport stream” and see col. 4 line 52 – col. 5 line 3 “The term MPEG refers to the data transmission standards developed by the ISO working group and notable the MPEG-2 standard developed for digital television applications . . . in the context of the present patent application, the term includes all variants, modifications or developments of the basic MPEG formats applicable to the field of digital data transmission.” And col. 5 lines 31-33 “The multiplexer 4 may be any conventional multiplexer conforming to the MPEG standard . . .”).

7. As for **Claim 17**, Tranchard teaches a data transport stream comprising:

a first portion derived from a transport stream (see col. 5 lines 26-27 “The scrambling unit 1 receives at its input unscrambled transport packets from a multiplexer . . .”. The input signal before scrambling and insertion of packets (replacing of null packets with data packets) is interpreted as the first portion); and

a second portion derived from insertion content (see col. 11 line 57 – col. 12 line 1 “the outputs 30,31 represent the transport stream after modification by insertion/deletion of packets etc”), wherein a ratio of the first portion to the second portion is determined by characteristics of insertion content (as described above with reference to Claim 1, the PID of a packet is interpreted to be a characteristic of a packet. And the PID of a packet is used to filter out and modify packets that have a certain characteristics (See col. 9 lines 14-26 “the fact that a given packet has been filtered and copied into the memory does not mean that the packet has been physically removed from the transport stream. Accordingly, in the event that packets of a given

Art Unit: 2617

PID value are to be inserted in the transport stream, it will be necessary to delete the present packets having this value to avoid collision. . .the packet deletion unit is adapted to transform packets of a given PID value to null packets". When a packet with payload is modified into a null packet, this clearly increased the available bandwidth because the amount of available null bandwidth is a direct indication of available future bandwidth. Also as described above, the first portion is defined to be the data stream before insertion (see col. 5 lines 26-27 "The scrambling unit 1 receives at its input unscrambled transport packets from a multiplexer . . .". The input signal before scrambling and insertion of packets (replacing of null packets with data packets) is interpreted as the first portion), and the second portion is defined to be the data stream after modification/insertion (see col. 11 line 57 – col. 12 line 1 "the outputs 30,31 represent the transport stream after modification by insertion/deletion of packets etc". Clearly, the ratio of the first portion to the second portion is determined by the characteristic of the insertion content because packets are modified and/or deleted based on their PID, which is interpreted to be a characteristic of the packets.

The ratio of the first portion to the second portion is also determined by an estimate of available bandwidth within said transport stream representing selected replaceable content within said transport stream (see col. 8 lines 35-38 "In particular, the PID counter 21 may be used to count the number of null packets present in the transport stream so as to evaluate the bit rate available for insertion of further-packets") and by insertion of said insertion content by replacement of said selected replaceable content within said transport stream with portion of said insertion content to form said

Art Unit: 2617

data transport stream (see col. 9 lines 37-39 "the packet insertion unit 25 is in fact adapted to detect and replace any null packets by packets held in the memory for insertion in the transport stream.").

8. As for **Claim 19**, Tranchard teaches said first portion further comprises packets within said transport stream which include packet type identifiers other than one or more selected packet type identifiers (see col. 5 lines 26-27 "The scrambling unit 1 receives at its input unscrambled transport packets from a multiplexer . . .". The input signal before scrambling and insertion of packets (replacing of null packets with data packets) is interpreted as the first portion. And also see col. 10 lines 6-7 "Only the PID field in the transport packet header is modified. Transport packets not designated by these PID values remain unchanged." It is interpreted that the input signal before scrambling defined as "first portion" contains packets with PIDs other than PIDs that are selected packet type identifiers because transport packets not designated by certain PIDs remain unchanged); and

said second portion further comprises packets for said insertion content in place of packets within said transport stream which include one of said one or more selected packet type identifiers (see col. 9 lines 37-39 "the packet insertion unit 25 is in fact adapted to detect and replace any null packets by packets held in the memory for insertion in the transport stream.").

Art Unit: 2617

9. As for **Claim 20**, Tranchard teaches the data transport stream as set forth in claim 19 wherein said second portion further comprises packets for said insertion content in place of null packets within an MPEG-2 transport stream forming the transport stream (see see col. 9 lines 37-39 "the packet insertion unit 25 is in fact adapted to detect and replace any null packets by packets held in this memory for insertion in the transport stream" and see col. 4 line 52 – col. 5 line 3 "The term MPEG refers to the data transmission standards developed by the ISO working group and notable the MPEG-2 standard developed for digital television applications . . . in the context of the present patent application, the term includes all variants, modifications or developments of the basic MPEG formats applicable to the field of digital data transmission." And col. 5 lines 31-33 "The multiplexer 4 may be any conventional multiplexer conforming to the MPEG standard . . .").

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,6,10,14,and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tranchard (EP 926894) in view of Sohraby (U.S. Patent # 6,192,049).

Art Unit: 2617

10. As for **Claims 2,6,10,14,18** Tranchard teaches said bandwidth estimator produces said estimate of future available bandwidth from information regarding current and future programming to be transmitted by said transport stream (see col. 8 lines 29-42 “the PID counter 21 may be used to verify the presence or absence of packets with a predetermined PID value in the transport packet stream as well as to count the number of packets bearing this PID value that are present in a given block of transport packets. In particular, the PID counter 21 may be used to count the number of null packets present in the transport stream so as to evaluate the bit rate available for insertion of further-packets”. Clearly, null packets are used to insert data packets and therefore, it is interpreted that the number of null packets is “information regarding the current transport stream”, and at the same, null packets also represent “future programming to be transmitted by said transport stream” because actual data packets are expected to be replacing these null packets.). However, Tranchard does not expressly teach said bandwidth estimator produces said estimate of future available bandwidth from periodic bandwidth utilization measurements for said transport stream. Sohraby however teaches a networking routing method wherein bandwidth utilization is periodically measured to ensure a more accurate prediction of network congestion and available resources (see Abstract of Sohraby “by utilizing periodic updates of bandwidth usage . . . time slot availability becomes predictable”). In light of the teaching of Sohraby, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Tranchard to include a periodic bandwidth utilization measurements in order to estimate future available bandwidth. One of

ordinary skill in the art would have been motivated to periodically measure the bandwidth utilization in order to more accurately estimate the future available bandwidth.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirubel Aklilu whose telephone number is 571-272-7342. The examiner can normally be reached on 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelly can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KA

7/24/05



NGOC-YEN VU
PRIMARY EXAMINER